INDUSTRIALIZATION AND RACIAL INEQUALITY WITHIN THE AMERICAN SOUTH, 1950-70

ROBERT A. ELGIE Colgate University

or urbanization on racial and ethnic relations have elaborated two opposing perspectives. One of these conceptualizes industrialization as a grand mover of social change that effects a progressive decline in racial and ethnic discrimination and inequality. This argument is typically constructed by projecting to the racial field a variety of social consequences alleged to stem from the intrinsic character of industrialization. It undermines the traditional social order, throws people into new situations and relationships and fashions a new social order. These paths of influence encourage the replacement of particularistic criteria for determining social, political and economic attainment by universalistic criteria. Reduction in racial discrimination and inequality represents merely one such outcome (Blumer, 1965).

Critics claim that there is no logical or theoretical necessity for the link between industrialization and universalism (Stokes and Harris, 1978). Rather, industrialization should be viewed as a complex process whose form may be adapted to influences in a specific regional context. In societies with strongly ordered racial systems, industrialization may alter the social order substantially, leaving the racial system essentially intact. In short, there are no universals. This dimension of industrialization's role as an agent of social transformation must be carefully assessed in particular regional contexts.

These perspectives are well represented in work focused upon the implications of industrial and urban transformation for racial stratification within the American South. Initially the universalism thesis prevailed, yet the precise mechanisms linking these spheres varied from author to author. Some took the position that the traditional racial caste system would interfere with the free movement of workers from job to job (Yinger and Simpson, 1958). Others stressed the sheer difficulty of enforcing a rigid racial caste system within the urban context (Lewis, 1954). Still others focused upon the role of attitude change, postulating that modernization would foster "liberal tendencies" (Myrdal, 1944).

Subsequent work challenged the proposition that southern industrialization was a sufficient condition for the reduction of racial disparities. Blalock (1959:147) argued that the South was not necessarily gaining the kind of industrial structure capable of influencing prevailing

discriminatory labor market practices significantly. A corollary of this perspective is that the patterning of black disadvantage within the South is unlikely to reflect the incidence of industrialization and urbanization. Rather, alternative attributes of community context, particularly black visibility, may be expected to remain more salient forces "where there is a cultural heritage encouraging both anti-black prejudice and corresponding discriminatory practices" (Wilcox and Roof, 1978:421).

Some recent contributions to this debate represent so strong an attack on the universalism thesis as to constitute a radical reinterpretation. Clearly the most detailed argument is that of Ford (1973). Ford attempts to show how social change or modernization may create economic adversity for particular groups. He sketches out a causal chain, linking agricultural mechanization to changes in the economies of scale in agriculture, crop structure and the productive capacity of the agricultural sector. These processes, in turn, stimulated increases in farm size, the elimination of uneconomic small farms and reductions in farm tenancy. At this point economic change became, in Ford's terminology, filtered by the social system. Blacks faced the most severe consequences because of both their limited opportunities for farm ownership and the unwillingness of white owners to give them employment as operators of the new farm equipment.

Similarly, Roof (1972) argues that the urban containers of southern industrialization have been structured so as to institutionalize racial inequality. The mechanism he focuses upon is residential segregation and ghettoization. Roof's argument may be viewed as a particular example of a more general position advanced by Peet (1975). Manipulation of the spatial structure of resources and opportunities within a community imposes differential limits on the life chances of individuals. Therefore, such manipulation constitutes a key set of microlevel processes for the intergenerational perpetuation of social inequality.

Given this marked interpretive shift concerning the perceived distributive consequences of southern industrialization, it is reasonable to ask which perspective the evidence favors. Unfortunately the limited body of empirical research that exists possesses serious weaknesses which impair its ability to provide firm support for any of these perspectives.

One serious weakness concerns the measures of industrialization. Those who stress the role of industrialization as an agent of distributive change typically view it as a multidimensional process whose impact upon distributive processes is the product of a complex causal sequence. For example, Treiman (1970) has explicitly postulated that industrialization should have the effect of reducing the ascription component in status attainment. But how does industrialization gain its leverage upon such stratification processes? According to Treiman, the effects are mediated by broad changes in the structure of stratification such as increased educational and income attainment or a more convoluted occupational structure. Such multidimensional richness is seriously emasculated by

employing such narrow operational indexes as percent urban, age of city or value added by manufacturing.

Secondly, the most detailed empirical analysis is operationalized as cross-sectional for a single point in time. But to at least some theorists it is the rate, not the extent, of industrialization that matters. For example, in Lenski's (1966) theory, the rate of industrial growth is explicitly related to income inequality. His reasoning may be summarized in the following way. Dispersion of power within the more industrialized society creates greater pressure on the elite to make certain concessions to the remainder of society. In a society with a high rate of economic development it is possible for the dominant groups to make sacrifices in relative terms without necessarily suffering any loss in absolute terms. More recently, this principle has been applied to the issue of racial inequality within the United States by James Coleman (1971).

The present paper attempts to provide a more effective test of these alternative perspectives by remedying the design deficiencies described. Four features of the research design should be emphasized. First, industrialization is defined operationally in both cross-sectional and longitudinal terms. Second, the explicit multidimensionality of this concept is retained. Third, industrialization's racial inequality role is assessed for more than a single time period. Fourth, the contribution of industrialization to the spatial patterning of black disadvantage is compared explicitly to that of minority visibility. These features permit differential racial inequality consequences generated by separate facets of this broadly defined phenomenon to be distinguished, if present. They also permit examination of the stability of industrialization's racial inequality role within this region over time. Thus we may assess the degree to which the alternative perspectives encountered in the literature reflect the dynamics of particular decades or the contribution of particular facets of the explanatory concept.

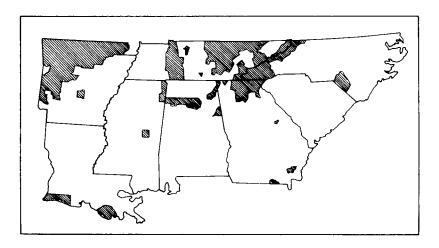
The assessment is conducted for the 20-year period, 1950-70. These two decades have much in common from a modernization perspective. Industrialization, urbanization and agricultural transformation were extensive in both. Industrialization involved not only expansion of the manufacturing sector but also a gradual shift toward a more favorable industry mix with respect to both national growth rates and wage levels; urbanization subsumed both rural to urban migration and metropolitan expansion (Greenhut and Whitman, 1964; Sample, 1974). Agricultural transformation embraced mechanization, farm consolidation and changes in crop structure (Ford, 1973). But from the perspective of racial inequality, there is a key difference between the two decades. Only during the 1960s does federal executive and judicial intervention, backed by strengthened legislative tools such as the unprecedented, multifaceted Civil Rights Act of 1964, represent a potentially powerful force for change.

METHODOLOGY

The study area conforms broadly to the Southeast as defined by the U.S. Department of Commerce. Counties constitute the individual observational units. However, four entire states are excluded from the analysis. Kentucky and West Virginia contain too few blacks outside the major urban centers for meaningful analysis. Virginia has an unusual, and therefore noncomparable, method of regional classification into both counties and independent cities. Florida experienced large-scale immigration of Cuban exiles during the study period. Thus, observed change in the magnitude of racial inequality may simply be due to the increased weight of the Spanish population. Finally, an additional 129 counties had to be eliminated from the remaining eight-state region because separate tabulations for their black populations were not available for at least one time period (Figure 1).

Racial inequality indicators are generated for three achievement areas: education, occupation and income. These were selected because of the critical positions they occupy within the conceptual paradigm of the socioeconomic life cycle and, therefore, their potential consequences for the life chances of individuals. The measure of income equality used is a simple percentage ratio of black median family income to white median family income. For both education and occupation, an equality index is

FIGURE 1
Study Area and Excluded Counties



used to assess the relative position of blacks in a particular county. The equality index is derived from systematic comparison of the percentage distributions of two populations across a set of categories and assesses the degree to which there exists complete identity or overlap between the two percentage distributions (Palmore and Whittington, 1970).

Eight educational attainment categories are used to generate the equality index for this area. It may, of course, be argued that educational attainment is only a crude indicator of the quantity of education and ignores possible variation in the quality of education conferred on blacks and whites. Unfortunately, information about the differential quality of formal education is neither plentiful nor systematic. At any rate there is some evidence that blacks are not markedly less able than whites to transform years of schooling into competence (Hauser, 1970).

Ten broad census-defined occupational categories are used to generate the occupational equality indexes. This approach risks a line of criticism that attributes racial occupational dissimilarity, at least in part, to differences in the way blacks and whites value a set of occupational categories. Fortunately, studies of the racial patterning of occupational prestige suggest that this is not a serious problem (Siegel, 1970). The high degree of aggregation characterizing the occupational classes used probably constitutes a more serious weakness. Since occupational differentiation within each category is ignored, the measure will underestimate occupational dissimilarity.

Indexes of industrialization are generated inductively using principal components analysis. Of course, the use of components analysis makes the issue of initial variable selection a critical design element. In a very real sense this decision conditions the nature of the indexes that are elicited. In this case, the 17 variables selected to generate indexes of the level of industrialization tap such varied aspects of the underlying concept as urban-rural orientation; agricultural scale; scale of markets; manufacturing scale; the sheer magnitude of population, secondary and tertiary activity; educational attainment; affluence and occupational orientation (Table 1).1

The industrialization level components generated by this procedure are reasonably stable over the 20-year period. The three varimax factor loading matrices share four basic elements. These may be termed community size, educational status, manufacturing orientation and agricul-

¹ It must be noted that the variables used to define the separate elements of the industrialization domain for a given time period are not all available for the same year because of the variety of sources involved. For the 1950 period variables were derived from 1948 Census of Manufacturers, 1947 Census of Business, 1950 Census of Agriculture and 1950 Census of Population. For the 1960 period variables were derived from 1958 Census of Business, 1958 Census of Manufacturers, 1959 Census of Agriculture and 1960 Census of Population. For the 1970 period variables were derived from 1967 Census of Business, 1967 Census of Manufacturers, 1969 Census of Agriculture and 1970 Census of Population. All dollar series used are for years preceding census years.

TABLE 1
Rotated Factor Matrix: 1950 Industrialization Level Indicators

Variable	Factor 1	Factor 2	Factor 3	Factor 4
Median school years	.31	.05	.92	15
Percent with less than 5				
years of education	16	09	94	.18
Percent employed in manu-				
facturing	.16	.81	.11	33
Percent employed in white collar				
occupations	.81	.03	.34	10
Percent males employed in				
farming	64	41	17	.30
Median family income	.65	.46	.32	.04
Percent urban	.82	.24	.14	.02
Log ₁₀ population density	.00	05	.00	02
Percent rural nonfarm	25	.10	04	15
Log ₁₀ manufacturing employment	.75	.57	.09	08
Manufacturing employment per				
establishment	.29	.88	.01	.01
Log ₁₀ retail sales	.94	.15	.09	.08
Retail sales per capita	.87	.12	.19	.08
Percent farms commercial	08	20	16	.81
Acres per farm	12	01	13	.12
Value of products sold per farm	.20	06	24	.83
Log ₁₀ population	.89	.14	.07	.06

tural scale components. Table 1 illustrates this factor structure for the 1950 period.

Within this framework of stability, three secondary distinctions should be noted. First, the *community size* dimension narrows between 1950 and 1970. By 1970, loadings for the percent urban (.54), percent white collar (.44) and median family income (.36) variables have weakened considerably. Second, as this dimension narrows, the *educational status* dimension broadens to embrace occupational and income status. The 1970 percent white collar (.55) and median family income (.74) factor loadings suggest that the component in this year might as easily be labeled *socioeconomic status*.

The third difference in component structure concerns those variables indexing manufacturing. The 1950 and 1960 factor analyses each produce a single, broad manufacturing orientation dimension that subsumes both the relative importance of manufacturing and the scale of the average establishment. But by 1970 these two aspects of the manufacturing content of places are no longer tightly bound together. There are two discrete components that index the relative importance of manufacturing employment (manufacturing orientation) and the scale of the average establishment (manufacturing scale).

Industrialization rate indexes for the 1950s and 1960s are generated by first transforming the variables into change indicators by expressing end year values as a percentage fraction of beginning year values or by subtracting beginning year values from end year values if they are already expressed as percentages. In addition, population change is differentiated into its two key demographic components, natural increase and net migration. Components analysis of the 18 change measures generates four industrialization rate dimensions common to both decades: employment shifts from the primary to the secondary and tertiary sectors, with associated income gains; urbanization; educational attainment gains; and agricultural commercialization. In addition, for the 1960s a separate rural outmigration dimension, which embraces both population redistribution and farm consolidation, is indentified.

Finally, component scores for the observational units on these industrialization level and rate dimensions are related to the racial equality indicators in a series of path models (Figure 2). Scores on the industrialization dimensions constitute the identified exogenous variables of these path models. The racial equality measures constitute the models' endogenous variables.

FINDINGS

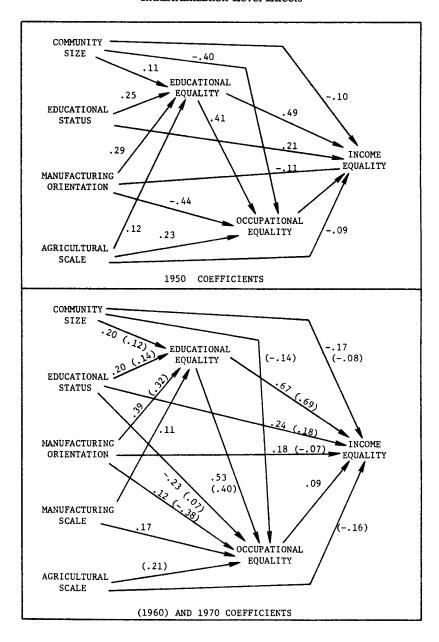
The influence of industrialization *levels* upon the spatial structure of racial inequality within the South during this period may be assessed from Figure 2. To conserve space, standardized path coefficients for both the 1960 and 1970 models are presented in the lower panel with 1960 coefficients in parentheses. Only those coefficients greater than .05 are included.

With respect to racial educational attainment equality, these models provide consistent support for the universalism thesis in all three periods. The greatest educational equality is exhibited by the larger communities, those with better educated, more affluent populations, and those in which manufacturing industry assumes an important role.

The influence of this domain upon racial occupational and income equality is less consistent. For these two attainment areas, both positive and negative direct effects are present in each period. However, when total effect coefficients (to which indirect effects mediated by the degree of educational attainment equality make a substantial contribution) are examined, a general pattern emerges.

Early in the period, substantial positive and negative total effects are both present. For example, both community size (-.36) and manufacturing orientation (-.32) exert negative total effects upon racial occupational equality. By contrast, positive direct effects flow from agricultural scale (.28) to occupational equality and from educational status (.36) to income equality. But by 1970 all of the substantial total effects pre-

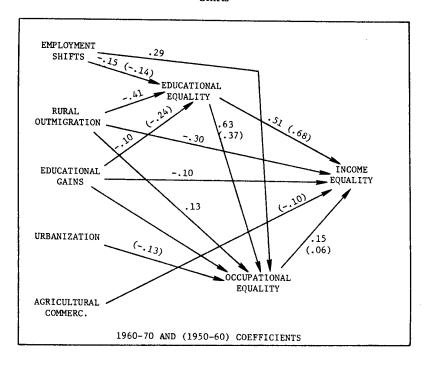
FIGURE 2
Industrialization Level Effects



sent are positive. These include positive total effects of manufacturing orientation (.32) and manufacturing scale (.23) on occupational equality and of manufacturing orientation (.44) and community size (.34) on income equality. In short, by 1970, in all three attainment areas the coefficients of total effect yielded by this path model generally support the universalism thesis.

The strongest influences present in the industrialization *rate* models are clearly generated by the rural outmigration dimension isolated for the 1960s (Figure 3). Negative path coefficients of moderate strength link it directly to both educational and income equality. Moreover, a strong indirect link via educational equality reinforces the direct effect upon income equality to create a strong total effect (-.54) on this indicator. Apparently a black population with low educational and income status had, by the close of this period, been stranded in those communities most affected by farm consolidation and rural outmigration during the 1960s. These findings are consistent with the arguments of Ford

FIGURE 3 Industrialization Rate Effects Employment Shifts



(1973) concerning the perverse human consequences of agricultural transformation in the more rural parts of the region. Only two other path coefficients as high as .20 are present. Improvements in educational attainment during the 1950s exert a negative effect upon 1960 levels of racial educational equality, suggesting that such gains were limited to the white population. Employment shifts toward secondary and tertiary activity during the 1960s, or perhaps simply the growth of nonagricultural employment opportunities, exerted a positive influence upon 1970 levels of racial occupational equality.

The above discussion leaves one important question unanswered: just how strong a contribution does the entire set of industrialization level or rate components make to the regional patterning of racial inequality? One possible way of assessing their combined contribution is to examine for each racial equality indicator the coefficient of determination of the reduced-form equation which contains only the industrialization components as predetermined variables. Such equations will isolate their combined total effects, whether direct or indirect.

Such an approach suggests that we may attribute only a modest influence upon the spatial structure of racial inequality within these achievement areas during this period to the entire set of industrialization level or rate indexes (Table 2). On the average these components account for only about 17 percent of educational, occupational and income indicator variance.

Moreover, there exists a serious possibility that even the modest effects isolated by these models may exaggerate industrialization's influence on racial inequality. The coefficient estimates are based upon operational procedures (ordinary least squares) which assume that the predetermined variables of any equation are uncorrelated with the error term. To the extent that these conditions are not satisfied these estimates will tend to be biased. In particular, there is the strong possibility that some fraction of the effects isolated by the above procedures might just as easily be attributed to a quite different realm of community context. By way of illustration, let us examine this possibility with respect to minority presence, an aspect of community context introduced earlier as a potential influence upon racial disparities within the American South.

TABLE 2
Coefficients of Determination for Reduced-form Equations:
Industrialization Levels or Rates Predetermined

Equality	Industrialization Levels Industrialization Rates					
Indicator	1950	1960	1970	1960	1970	
Educational Occupational Income	.17 .33 .13	.14 .10 .11	.25 .18 .33	.10 .06 .08	.22 .08 .30	

The assessment will be conducted with particular reference to industrialization levels.

The consequences of entering an indicator of minority presence (percent nonwhite) into the industrialization level path models as an additional exogenous variable are illustrated in Figure 4. Three major points should be noted. First, the influence of minority presence upon educational and income equality, the two attainment areas upon which the industrialization components exerted the most consistently strong effects in the initial models, clearly exceeds that emanating from any of the industrialization components. The influence of minority presence on these two indicators is particularly strong in 1950 and 1960. Second, inclusion of minority presence alters several of the coefficients linking industrialization and racial inequality. In every case of substantial coefficient change the revised model assigns a less positive, or more negative, distributive impact to the industrialization measure. Third, in both 1950 and 1960 the coefficients of educational equality's total effect upon income equality estimated by the revised model is only half that of the original model's estimate. This suggests that a substantial fraction of the effects attributed to educational equality in the initial models may, in fact, be attributable to a common cause, minority representation and, therefore, spurious. This effect is much less pronounced in the 1970 period.

It is difficult to assess the overall contribution of the industrialization realm to the patterning of a given racial equality indicator directly from these models since the industrialization components and minority presence are intercorrelated. However, by examining the additional contribution each makes to explained variation in a racial equality indicator when added to the regression equation in alternative positions, it is at least possible to see whether industrialization or minority presence has the greater explanatory power.

The results of this procedure are presented in Table 3. Columns 1 and 2 compare the contributions made when each is introduced alone as the predetermined variable or variable set. Columns 3 and 4 show the contributions made when they are added at the second stage after the other realm of community context. Clearly, with regard to both educational attainment and income equality, minority presence is the more powerful force in all three periods. Although the industrialization components do represent a stronger influence upon occupational equality, the total effect observed is quite modest compared to the other two attainment areas, particularly in 1960 and 1970.

CONCLUSION

This research has attempted to isolate the contribution of industrialization or modernization within the American South to the spatial structure

FIGURE 4 Industrialization Level and Minority Presence Effects

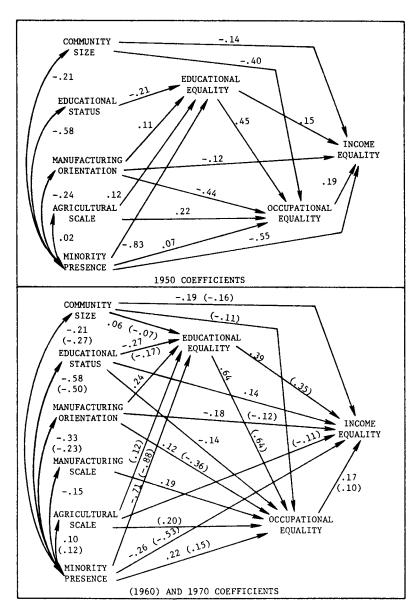


TABLE 3

Contributions of Industrialization Levels and Minority Presence to Explained Variation in Equality Indicators

	Percent Variance Accounted for When Entered at:					
Equality Indicator and	First St	tage	Second Stage			
Period	Industrialization	Minority	Industrialization	Minority		
Educational						
1950	.17	.53	.05	.41		
1960	.14	.52	.07	.45		
1970	.25	.47	.09	.31		
Occupational						
1950	.33	.01	.38	.06		
1960	.10	.02	.19	.11		
1970	.18	.04	.17	.03		
Income						
1950	.13	.38	.07	.32		
1960	.11	.51	.06	.46		
1970	.33	.41	.12	.20		

of racial inequality. It was motivated by the disagreement among social scientists concerning whether such processes represent a progressive force for the amelioration of racial disparities or contain their own potent instruments to preserve, and even widen, existing disparities. What should we conclude concerning this controversy, based on the evidence presented?

Three general points seem to merit emphasis. First, it may not be necessary to choose unequivocally between these alternative perspectives. There may be some truth to both. This may be seen most clearly in the 1970 models. The 1970 industrialization level path model suggests that, by the end of this period, black status in the achievement areas examined was highest in the larger southern communities with high socioeconomic status populations, particularly those with robust manufacturing sectors. But according to the rate path model, black status was lowest in those parts of the South that underwent, during the 1960s, rapid farm consolidation and associated outmigration. In short, agricultural mechanization and urban-industrial concentration, two fundamental and interrelated threads of southern modernization, may simply have affected regional racial disparities differentially.

Second, these findings cannot be said to provide strong support for either of these perspectives. The industrialization components employed accounted, on the average, for 17 percent of total regional variance in

the three racial equality indicators examined. But these components tend to be closely intertwined statistically with the spatial patterning of minority presence. Moreover, there are convincing arguments, based upon white reaction to the perceived threat represented by relatively large numbers of blacks, why the patterning of minority presence might constitute an important determinant of racial status disparities (Blalock, 1967). The methodology employed here suggests that minority representation represented the more potent influence upon the spatial structure of racial inequality, although the relative influence of the industrialization domain did grow between 1950 and 1970.

Third, despite the above, it would perhaps be premature to conclude that southern modernization has had limited distributive consequences in this arena of social relations compared, say, to the role played by federal executive and judicial intervention (see Wirt, 1970). Rather, the present findings may simply suggest the advisability of reorienting our research attention slightly.

The strongest linkages between facets of modernization and racial inequality isolated in any of the models examined originated from the rural outmigration component identified for the 1960s. It may be that regional migration dynamics provide the real key to uncovering how economic transformation of the region has influenced the spatial configuration of racial disadvantage. After all, observed change in levels of racial disadvantage over a decade may be due as much to differences in the migration propensities of blacks and whites as to changed relative status of the resident black and white populations. For example, a crude examination of State Economic Area county groupings, for which more detailed migration data is available, suggests that differences in outmigration propensities may have contributed to the modest status improvement observed during the 1960s in Louisiana counties and the relatively rapid status gains shown by South Carolina counties (Elgie, 1980).

The potential impact of migration from the South upon the racial inequality properties of northern metropolitan destinations has been recognized for some time to be an important research topic with significant policy implications (Masters, 1975; Lieberson and Wilkinson, 1976). It may be time to redirect some of this research attention toward careful assessment of how population redistribution has influenced the patterning of racial inequality within the South. Such an assessment of the consequences of population redistribution might provide the information needed to reconcile the alternative perspectives and differential effects discussed here.

REFERENCES

Blalock, Hubert, Jr. 1959. "Urbanization and Discrimination," Social Problems, 7 (Fall):146-52.

Blalock, Hubert, Jr. 1967. Toward a Theory of Minority Group Relations (New York: Wiley).

Blumer, Herbert. 1965. "Industrialization and Race Relations," in Guy Hunter, ed., Industrialization and Race Relations (New York: Oxford University Press).

Coleman, James S. 1971. Resources for Change: Race in the United States (New York: Wiley).

Elgie, Robert. 1980. "Territorial Social Indicator Construction: An Alternative Perspective and Example," Social Indicators Research, 6 (June):175-97.

Ford, Arthur. 1973. Political Economics of Rural Poverty in the South (Cambridge, Mass.: Ballinger).

Greenhut, Melvin, and W. Tate Whitman, eds. 1964. Essays in Southern Economic Development (Chapel Hill: University of North Carolina Press).

Hauser, Robert. 1970. "Educational Stratification in the United States," in E. O. Laumann, ed., Social Stratification: Research and Theory for the 1970's (Indianapolis: Bobbs-Merrill).

Lenski, Gerhard. 1966. Power and Privilege: A Theory of Social Stratification (New York: McGraw-Hill).

Lewis, Hylan. 1954. "Innovations and Trends in the Contemporary Southern Negro Community," Journal of Social Issues, 10 (January):19-27.

Mydral, Gunnar. 1944. An American Dilemma (New York: Harper).

Palmore, Erdman, and Frank Whittington. 1970. "Differential Trends toward Equality between Whites and Nonwhites," Social Forces, 49 (September):108-16.

Peet, J. Richard. 1975. "Inequality and Poverty: A Marxist-Geographic Theory," Annals of the Association of American Geographers, 65 (December):564-71.

Roof, W. Clark. 1972. "Residential Segregation of Blacks and Racial Inequality in Southern Cities: Toward a Causal Model," Social Problems, 19 (Winter):393-407.

Sample, C. James. 1974. Patterns of Regional Economic Change: A Quantitative Analysis of U.S. Regional Growth and Development (Cambridge, Mass.: Ballinger).

Siegel, Paul. 1970. "Occupational Prestige in the Negro Subculture," in E. O. Laumann, ed., Social Stratification: Research and Theory for the 1970's (Indianapolis: Bobbs-Merrill).

Stokes, Randall, and Anthony Harris. 1978. "South African Development and the Paradox of Racial Particularism: Toward a Theory of Modernization from the Center," Economic Development and Cultural Change, 26 (January):245–69.

Treiman, Donald. 1970. "Industrialization and Social Stratification," in E. O. Laumann, ed., Social Stratification: Research and Theory for the 1970's (Indianapolis: Bobbs-Merrill).

Wilcox, Jerry, and W. Clark Roof. 1978. "Percent Black and Black-White Status Inequality: Southern versus Nonsouthern Patterns," Social Science Quarterly, 59 (December):421-34.

Wirt, Frederick, 1970. Politics of Southern Equality (Chicago: Aldine).

Yinger, J. M., and G. E. Simpson. 1958. "Can Segregation Survive in an Industrial Society?" Antioch Review, 18 (January):15-24.